

Welcome

The meeting will begin shortly, in the meantime please,

- Keep your phone muted during the meeting.
- If you have a question/comment during the meeting type it in the chat box and it will be read and addressed at the end of each presentation
- During the Call to public people will have the option to speak to the Council.
- If you experience any technical difficulties, please contact ADWR Help Desk at 602-771-8444 or tickets@azwater.gov



Meeting Agenda

1. Call to Order – Welcome & Introductions – *Chair*
2. Webinar Logistics – *Kennedy Shepard, ADWR*
3. Colorado River Update – *Rachel Von Gnechten, ADWR*
4. Arizona Water Bank Authority Preliminary 2022 Plan of Operation – *Virginia O’Connell, AWBA*

Virginia will present the AWBA 2022 Preliminary Plan of Operation to the GUAC and the public.

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Tucson AMA GUAC

September 23, 2021



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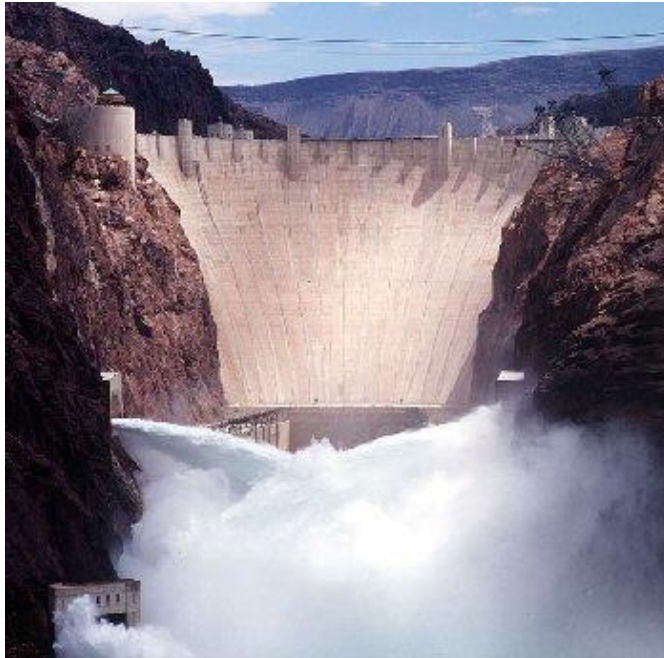
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COLORADO RIVER BASIN STATUS UPDATE

Presented to:
Groundwater Users Advisory Council
Tucson Active Management Area
September 23, 2021



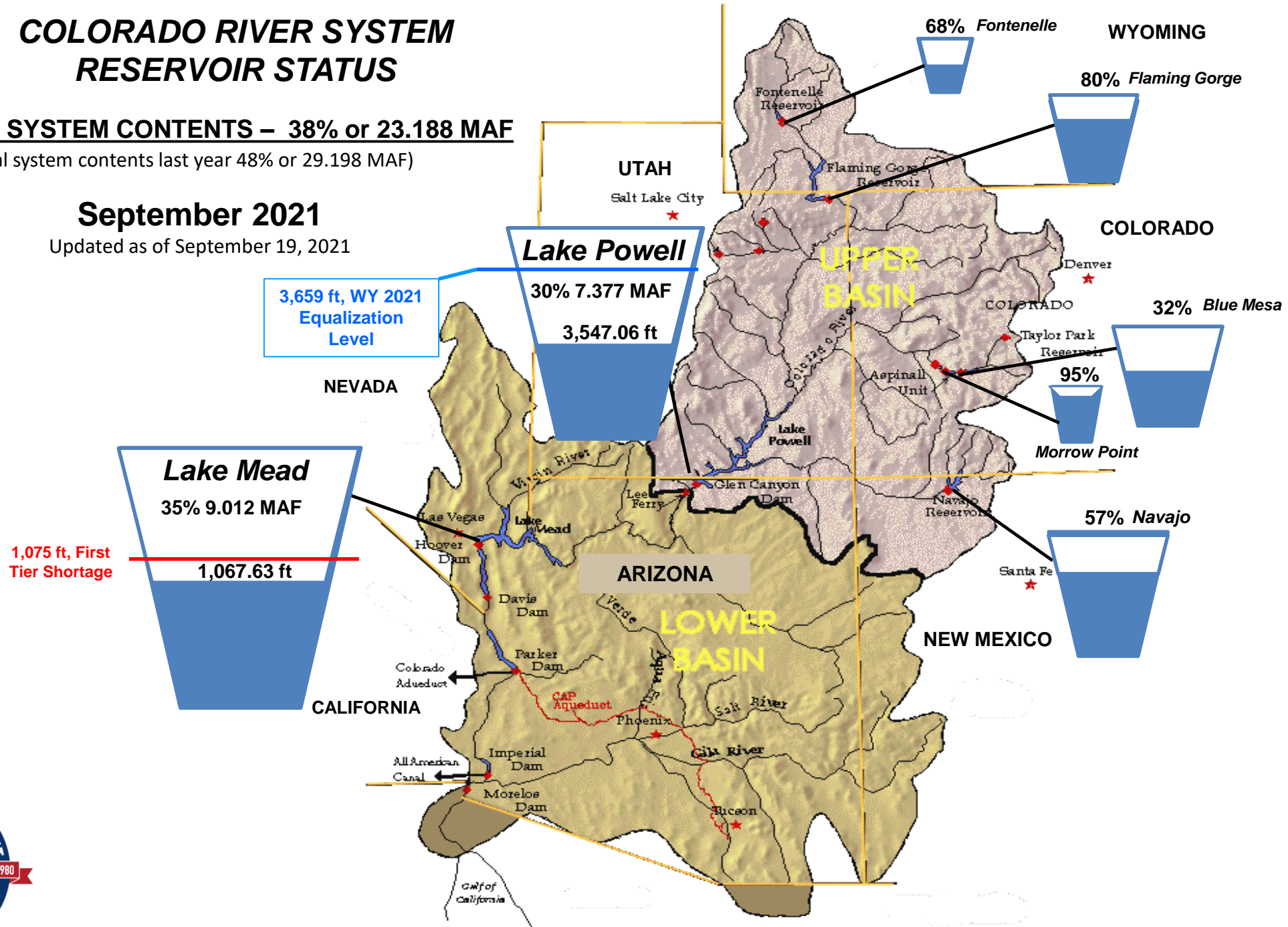
COLORADO RIVER SYSTEM RESERVOIR STATUS

TOTAL SYSTEM CONTENTS – 38% or 23.188 MAF

(Total system contents last year 48% or 29.198 MAF)

September 2021

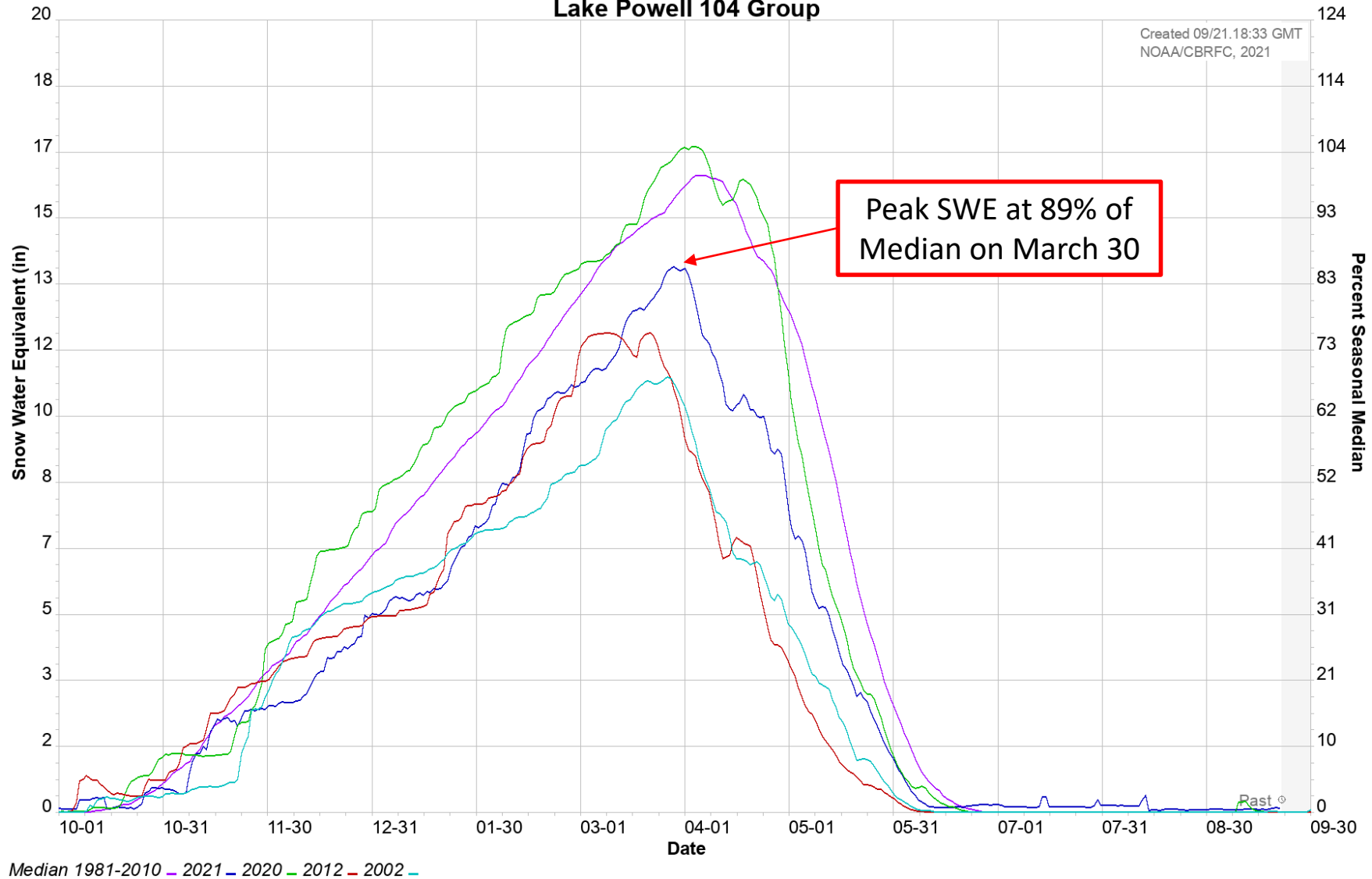
Updated as of September 19, 2021

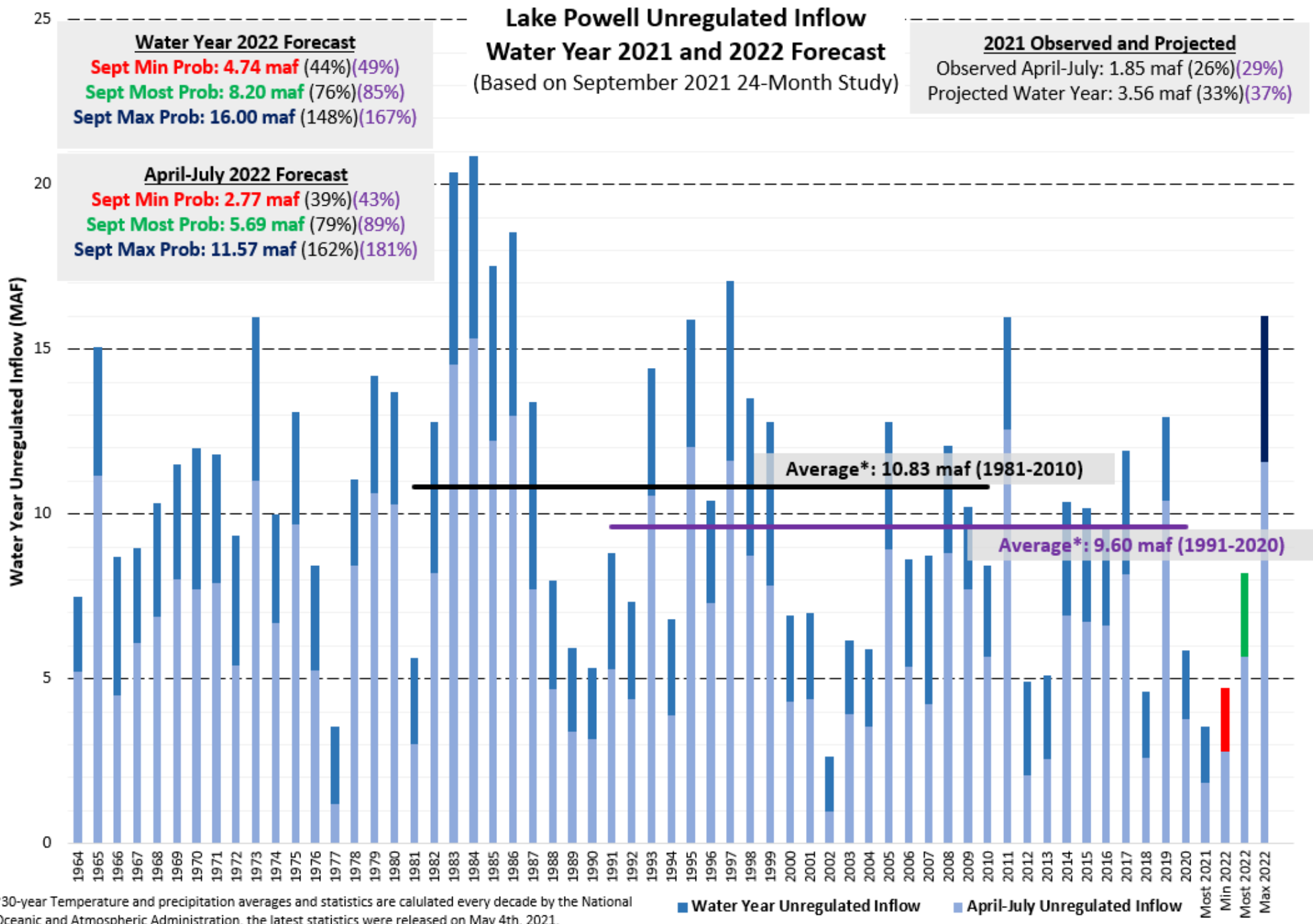


Snow Water Equivalent

Conditions as of September 21, 2021

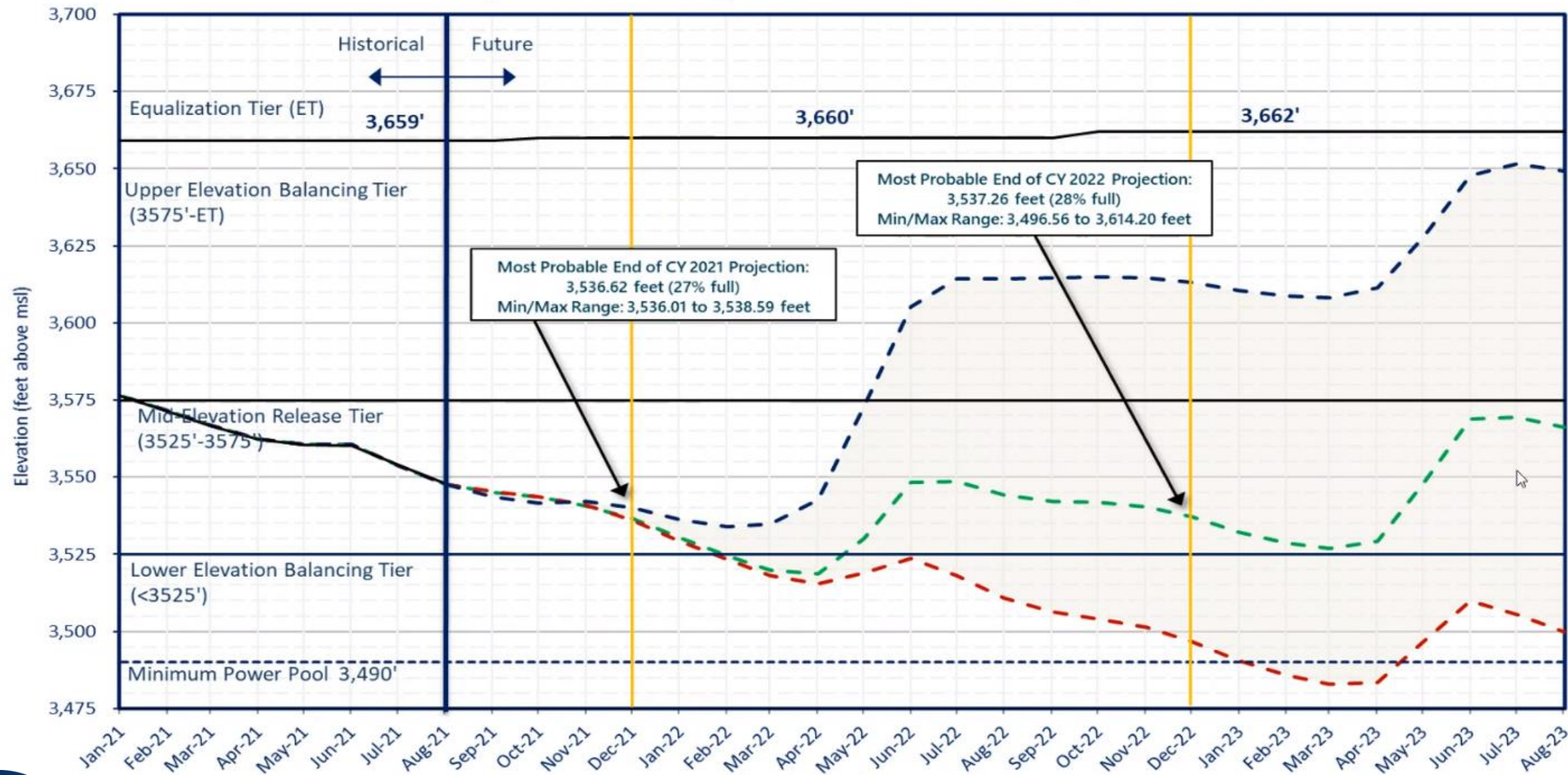
Colorado Basin River Forecast Center
Lake Powell 104 Group





Lake Powell End of Month Elevations

Projections from the September 2021 24-Month Study Inflow Scenarios



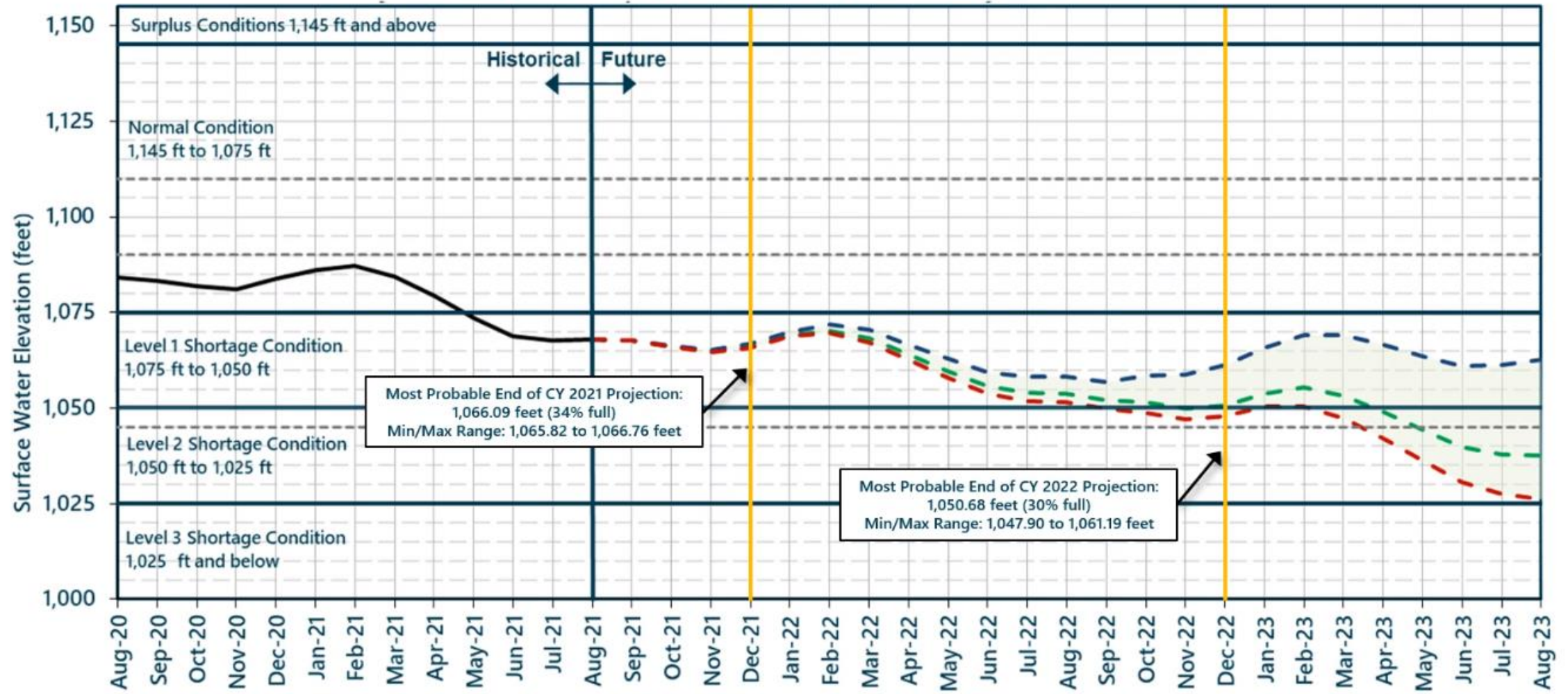
- September 2021 Most Probable - Lake Powell release of 8.23 maf in WY2021 and 7.48 maf in WY2022
- September 2021 *DROA Minimum Probable - Lake Powell release of 8.23 maf in WY2021 and 7.48 maf in WY2022
- September 2021 *DROA Maximum Probable - Lake Powell release of 8.23 maf in WY2021 and 7.48 maf in WY2022
- Historical Elevations

*The Drought Response Operations Agreement (DROA) can be found here: <https://www.usbr.gov/dcp/finaldocs.html>



Lake Mead End of Month Elevations

Projections from the September 2021 24-Month Study Inflow Scenarios



— Historical Elevations

— September 2021 Most Probable Inflow with a Lake Powell release of 7.48 maf in WY 2022 and WY 2023

— September 2021 DROA* Maximum Probable Inflow with a Lake Powell release of 7.48 maf in WY 2022 and 9.00 maf in WY 2023

— September 2021 DROA* Minimum Probable Inflow with a Lake Powell release of 7.48 maf in WY 2022 and 7.00 maf in WY 2023

*The Drought Response Operations Agreement (DROA) is available online at: <https://www.usbr.gov/dcp/finaldocs.html>.

Source: Bureau of Reclamation



Lower Basin Side Inflows – WY/CY 2021^{1,2}

Intervening Flow from Glen Canyon to Hoover Dam

Month in WY/CY 2021		5-Year Average Intervening Flow (kaf)	Observed Intervening Flow (kaf)	Observed Intervening Flow (% of Average)	Difference From 5-Year Average (kaf)
Observed	October 2020	58	35	60%	-23
	November 2020	71	56	79%	-15
	December 2020	67	59	88%	-8
	January 2021	95	72	75%	-23
	February 2021	97	55	57%	-42
	March 2021	111	33	30%	-78
	April 2021	81	36	45%	-45
	May 2021	50	28	55%	-23
	June 2021	29	-14	-48%	-43
	July 2021	64	93	146%	29
	August 2021	81	89	109%	7
Projected	September 2021	71			
	October 2021	58			
	November 2021	71			
	December 2021	67			
WY 2021 Totals		876	612	70%	-264
CY 2021 Totals		876	659	75%	-217

¹ Values were computed with the LC's gain-loss model for the most recent 24-month study.

² Percents of average are based on the 5-year mean from 2016-2020.



Upper Basin – Lake Powell

Percent of Traces with Event or System Condition

Results from June 2021 CRMMS-ESP/CRSS using the **Full Hydrology** and **Stress Test Hydrology** (values in percent)

Event or System Condition	2021	2022	2023	2024	2025	2021	2022	2023	2024	2025
Equalization Tier (Powell \geq Equalization [EQ] Elevation)	0	0	3	9	14	0	0	0	<1	4
<i>Equalization – annual release > 8.23 maf</i>	0	0	3	9	14	0	0	0	<1	4
<i>Equalization – annual release = 8.23 maf</i>	0	0	0	0	0	0	0	0	0	0
Upper Elevation Balancing Tier (Powell < EQ Elevation and \geq 3,575 ft)	100	0	26	40	47	100	0	17	33	33
<i>Upper Elevation Balancing – annual release > 8.23 maf</i>	0	0	25	38	41	0	0	16	33	33
<i>Upper Elevation Balancing – annual release = 8.23 maf</i>	100	0	1	1	5	100	0	1	1	<1
<i>Upper Elevation Balancing – annual release < 8.23 maf</i>	0	0	1	1	0	0	0	0	0	0
Mid-Elevation Release Tier (Powell < 3,575 and \geq 3,525 ft)	0	91	55	38	26	0	91	72	49	41
<i>Mid-Elevation Release – annual release = 8.23 maf</i>	0	0	0	1	3	0	0	0	<1	8
<i>Mid-Elevation Release – annual release = 7.48 maf</i>	0	91	55	37	23	0	91	72	48	33
Lower Elevation Balancing Tier (Powell < 3,525 ft)	0	9	15	13	13	0	9	12	18	22
<i>Below Minimum Power Pool (Powell < 3,490 ft)</i>	0	0	6	9	8	0	0	5	17	16

Notes:

¹ Modeled operations include the 2007 Interim Guidelines, Upper Basin Drought Response Operations, Lower Basin Drought Contingency Plan, and Minute 323, including the Binational Water Scarcity Contingency Plan.

² Reservoir conditions from June-December 2021 were simulated using the June 2021 CRMMS in ensemble mode using the CRRFC unregulated inflow forecast ensemble dated June 3, 2021 (CRMMS-ESP).

³ Each of the 35 initial conditions from CRMMS-ESP were coupled with 114 hydrologic inflow sequences from the Full Hydrology that resamples the observed natural flow record from 1906-2019 for a total of 3,990 traces analyzed and with 32 hydrologic inflow sequences from the Stress Test Hydrology that resamples the observed natural flow record from 1988-2019 for a total of 1,120 traces analyzed.

⁴ Percentages shown in this table may not be representative of the full range of future possibilities that could occur with different modeling assumptions.

⁵ Percentages shown may not sum to 100% due to rounding to the nearest percent.



— BUREAU OF —
RECLAMATION

Lower Basin – Lake Mead

Percent of Traces with Event or System Condition

Results from June 2021 CRMMS-ESP/CRSS using the **Full Hydrology** and **Stress Test Hydrology** (values in percent)

Event or System Condition	2021	2022	2023	2024	2025	2021	2022	2023	2024	2025
Surplus Condition – any amount (Mead \geq 1,145 ft)	0	0	0	<1	4	0	0	0	0	0
Surplus – Flood Control	0	0	0	0	0	0	0	0	0	0
Normal or ICS Surplus Condition (Mead < 1,145 and > 1,075 ft)	100	0	3	12	15	100	0	5	3	1
Recovery of DCP ICS / Mexico's Water Savings (Mead $>/\geq$ 1,110 ft)	0	0	0	3	7	0	0	0	0	0
DCP Contribution / Mexico's Water Savings (Mead \leq 1,090 and > 1,075 ft)	100	0	3	9	9	100	0	5	3	1
Shortage Condition – any amount (Mead \leq 1,075 ft)	0	>99	97	88	81	0	>99	95	97	99
<i>Shortage / Reduction – 1st level (Mead \leq 1,075 and \geq 1,050)</i>	0	>99	74	31	23	0	>99	60	30	28
DCP Contribution / Mexico's Water Savings (Mead \leq 1,075 and > 1,050 ft)	0	>99	74	31	23	0	>99	60	30	28
<i>Shortage / Reduction – 2nd level (Mead < 1,050 and \geq 1,025)</i>	0	0	23	54	39	0	0	34	65	32
DCP Contribution / Mexico's Water Savings (Mead \leq 1,050 and > 1,045 ft)	0	0	17	9	8	0	0	26	4	7
DCP Contribution / Mexico's Water Savings (Mead \leq 1,045 and > 1,040 ft)	0	0	5	10	7	0	0	8	10	8
DCP Contribution / Mexico's Water Savings (Mead \leq 1,040 and > 1,035 ft)	0	0	0	13	8	0	0	<1	12	4
DCP Contribution / Mexico's Water Savings (Mead \leq 1,035 and > 1,030 ft)	0	0	0	13	10	0	0	0	22	9
DCP Contribution / Mexico's Water Savings (Mead \leq 1,030 and \geq 1,025 ft)	0	0	0	8	5	0	0	0	18	5
<i>Shortage / Reduction – 3rd level (Mead < 1,025)</i>	0	0	0	3	20	0	0	0	2	38
DCP Contribution / Mexico's Water Savings (Mead \leq 1,025 ft)	0	0	0	3	20	0	0	0	2	38

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⁴ Percentages shown in this table may not be representative of the full range of future possibilities that could occur with different modeling assumptions.

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⁶ While all CRMMS-ESP projections show Lake Mead's December 31, 2021 elevation falling below 1,075', the August 2021 24-Month Study will set the 2022 Lower Basin operating tier.



— BUREAU OF —
RECLAMATION

Questions?

Rachel von Gnechten
rvongnechten@AZWater.gov

Additional Resources

- Arizona Reconsultation Committee: <https://new.azwater.gov/arc>
- Colorado Basin River Forecast Center: <https://www.cbrfc.noaa.gov/>
- Lower Colorado Region River Operations: <https://www.usbr.gov/lc/riverops.html>
- Upper Colorado Region River Operations: <https://www.usbr.gov/uc/water/index.html>



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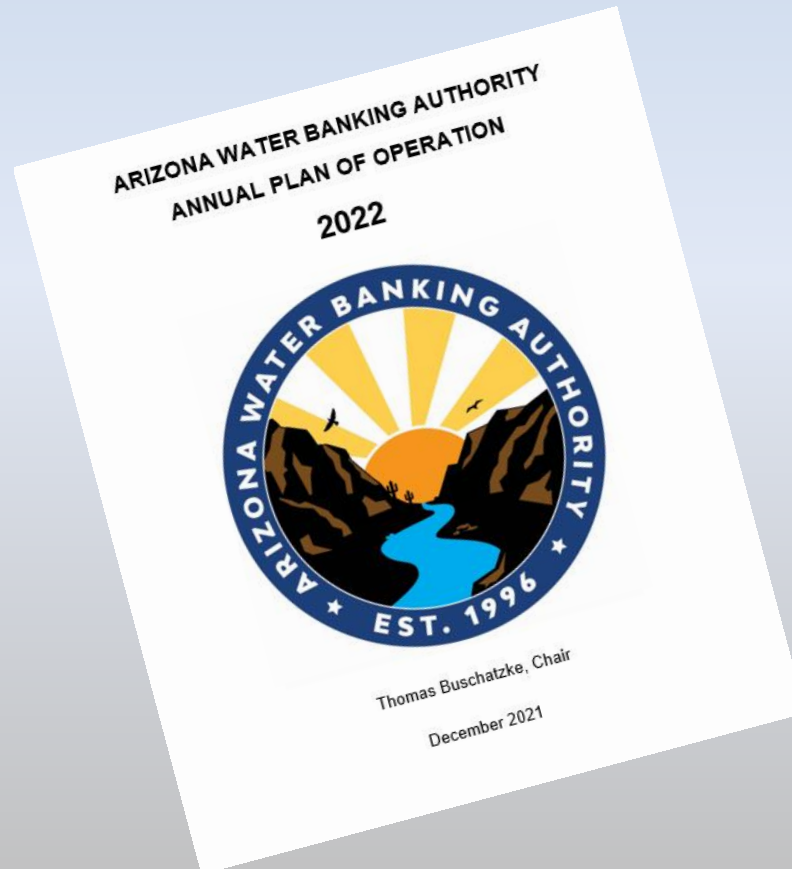
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2022 Preliminary AWBA Plan of Operation

**Groundwater Users Advisory Council
Tucson AMA**

**Presented By
Virginia O'Connell
September 23, 2021**



2022 Preliminary Plan of Operation

- Tier 1 Shortage Condition
- No Excess CAP water available to AWBA
- Goals achieved through other means
 - Long-term Storage Credit purchases
 - Intentionally Created Surplus Firming Credits
- AWBA Tribal firming requirement



2022 Water and Facility Rates

Recharge Rates	Cost / Acre-foot
CAWCD delivery rate for AWBA	\$242.00
Groundwater Savings Facility operator cost share rate ¹	
Phoenix and Pinal AMAs	\$34.00
Tucson AMA	\$16.00
Underground Storage Facility rate paid by AWBA	
CAWCD – Phoenix Facilities	\$13.00
CAWCD – Tucson Facilities	\$15.00
Tucson Water - Clearwater Facilities	\$19.78

¹ This rate is paid directly to CAP by the GSF operators and is not available as revenue to the AWBA



Funding for 2022 Plan of Operation

Funding Source	Estimated Funds Available		Estimated Funds Utilized		Estimated Credits (AF)	
	AWBA	CAWCD	AWBA	CAWCD	Water Storage	Developed Credits
Withdrawal Fees						
Phoenix AMA	\$866,600	-	\$866,400	-	0	2,980
Tucson AMA	\$396,000	-	\$396,000	-	0	1,450
Water Storage Tax						
Phoenix AMA	\$0	\$4,000,000	\$0	\$4,000,000	0	14,740
Pinal AMA	\$0	\$0	\$0	\$0	0	0
Tucson AMA	\$0	\$3,000,000	\$0	\$3,000,000	0	10,970
	Total Funds Available		Total Funds Expended		Total Credits	
	\$8,262,600		\$8,262,400		0	30,140

Estimated Credits and Firming Volumes thru 2022

Objective and Location	Credits Available ¹	Estimated Credits Used	Estimated Credits Remaining	Estimated Firming Volumes Needed ²	
	Acre-feet				
CAP M&I Firming (4-cent tax)					
Phoenix AMA	1,572,092	0	1,572,092	1,885,000 – 2,985,000	
Pinal AMA	233,740	0	233,740	293,000 – 463,000	
Tucson AMA	509,278	0	509,278	1,040,000 – 1,647,000	
On-River M&I Firming (gen. fund)	403,830	0	403,830	221,000 – 359,000	
Tribal Settlement Obligations: ³					
GRIC - 15,000 AFY	176,151	8,112	168,039	456,000 – 577,000	
LTSCs	105,390	0	105,390		
Firming Credits	44,000	8,112	35,888		
ICS Firming Credits	26,761	0	26,761		
WMAT - 3,750 AFY	0	0	0	112,000 – 142,000	
Hualapai - 557.5 AFY	0	0	0	17,000 – 21,000	
Future Settlements- 4416.5 AFY	0	0	0	261,000 – 330,000	
Federal Assistance (SAWRSA)	34,102	0	34,102	N/A	
Groundwater Mgmt ⁴ (W/Fees)					
Phoenix AMA	251,411	0	251,411	N/A	
Pinal AMA	417,453	0	417,453		
Tucson AMA	112,769	0	112,769		

¹ Actuals through September 2021; October through December estimated.

² Based on modeling results identified in the AWBA 2020 Annual Report.

³ WMAT enforceability date is April 30 2023; Hualapai firming subject to congressional approval

⁴ Withdrawal Fee LTSCs may be used for CAP M&I firmig and/or Tribal settlement obligations if needed.



Questions?

September 23, 2021
waterbank.az.gov



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Arizona Department of Water Resources

Governor's Water Augmentation, Innovation, and Conservation Council (Council) Updates



Jenna Norris
Council Coordinator
Arizona Department of Water Resources



Link to Governor's Water Council Webpage: <https://new.azwater.gov/gwaicc>

Council Updates

The Council last met on September 16, 2021 ([Meeting Recording](#))

- I. Welcome and Introductions
- II. Update on Colorado River Shortage – *Council Chair, ADWR Director Tom Buschatzke*
- III. Committee Updates
 - a. Non-AMA Groundwater Committee
 - b. Desalination Committee
 - c. Long-Term Water Augmentation Committee
 - d. Post-2025 AMAs Committee
- IV. Overview of AMA Agriculture Best Management Practices (BMPs) Program – *Natalie Mast, AMA Director Management Plans*
- V. Closing Remarks
- VI. Next Meeting

December 9, 2021, 10:00 a.m. - 12:00 p.m.
- VII. Adjournment



Committee Updates

Non-AMA Groundwater Committee:

* Meeting scheduled for October 14th from 10:00am-noon

- Login information and agenda posted ([Link](#))

Desalination Committee:

* Provided an overview of the work of the committee to date

- Summarized the work of the Legal & Regulatory Subcommittee, as well as the Brackish Groundwater and Arizona Law presentation, given by ADWR Deputy Counsel, Jennifer Heim. ([Link](#))

* **Two recommendations brought to the Council:**

- 1) Recommended brackish groundwater continue to be regulated as it is, as groundwater.
- 2) Recommended that unless the Council identifies additional tasks to pursue, the committee be put on standby until recalled for additional work.



Committee Updates (cont.)

Long-Term Water Augmentation Committee:

- * Summarized the Enhanced Aquifer Recharge presentation, given by ADWR Senior Research Hydrologist, Keith Nelson.
- * Plan to continue discussions on potential for recharging stormwater/flood runoff in subsequent meetings.

Storage Sites Subcommittee

- Submitted Potential Water Storage Sites on State Trust Land Report, required by HB 2249. ([Link](#))
- Staff is working to finalize and incorporate comments on the Draft Guide to Underground Water Storage Site Selection ([Link](#))



Post-2025 AMAs Committee:

- * Summarized the presentations on the 3 identified issues; Groundwater in the Assured Water Supply Program (June 22); Unreplenished Groundwater Demand (Aug 10); Hydrologic Disconnect (Sep 9)

* **Meeting scheduled for October 5th from 1:00-3:00pm**

- Login information posted ([Link](#))
- Topic: Prescott AMA Exempt Well Group Concepts

* **Meeting scheduled for October 27th from 1:00-3:00pm**

- Topic: Development of Solutions

Thank you!

Jenna Norris

Council Coordinator

jnorris@azwater.gov

Office Phone: 602-771-5262



John Riggins

Statewide Planning Manager

jrriggins@azwater.gov

Office Phone: 602-771-4782

ADWR Website: <https://new.azwater.gov/>

ADWR Phone: 602-771-8500

Link to ADWR Contacts: <https://new.azwater.gov/adwr/contact-us>

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Management Plans Update

Tucson AMA GUAC Meeting
September 23, 2021

Natalie Mast
AMA Director – Management Plans



Management Plans

A.R.S. § 45-563 (A)

“The director shall develop a management plan for each initial active management area for each of five management periods... and shall adopt the plans only after public hearings... The plans shall include a continuing mandatory conservation program... designed to achieve reductions in withdrawals of groundwater.”

Estimated 5MP Timeline

new.azwater.gov/5MP

2020: Development

- Work Group, Subgroups, & Stakeholder Outreach
- Data Analysis
- Develop [Concepts](#) to Increase Conservation
 - Update Existing Programs
 - Design New Programs

2021: Drafting

- Build out [Concepts](#) developed in previous phase
 - Regulatory Language
 - Feedback from GUACs/AMAs re: Customization & Implementation
- Draft Narrative & Background
- Develop Data Tools

2022: Adoption

- Publication of initial drafts
- Presentation to GUACs for recommendations
- Promulgation processes
 - Hearing & Public Comment
 - Findings & Adoption
 - Noticing of Conservation Requirements

5MP Concepts Webpage

<https://new.azwater.gov/5MP/plans-concepts>

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5TH MANAGEMENT PLANS CONCEPTS

As ADWR and the 5th Management Plans Work Group proceeds in the development of the 5th Management Plans, concepts and stakeholder comments related to 5MP conservation programs will be made available below. Meeting links are provided, to provide additional context for the concept. Any questions or comments on these concepts can be sent to managementplans@azwater.gov.

AGRICULTURAL SUBGROUP



INDUSTRIAL SUBGROUP



TURF BREAKOUT GROUP



MUNICIPAL SUBGROUP



Overview

Management Plans

5MPs Concepts

Meetings

AMA Data

Governor's Water
Augmentation, Innovation
and Conservation Council

Contact Us



managementplans@azwater.gov



A.R.S. § 45-421 Administrative duties of the groundwater users advisory councils

“The groundwater users advisory council shall:

- 1. Advise the area director for the active management area, make recommendations on groundwater management programs and policies for the active management area and comment to the area director and to the director on draft management plans for the active management area before they are promulgated by the director.*
- 2. Keep the minutes of its meetings and all records, reports and other information relative to its work and programs in permanent form indexed and systematically filed.*
- 3. Elect from its members a chairman and vice-chairman for terms of two years expiring on the third Monday of January of each even numbered year.*
- 4. Designate the person or persons who shall execute all documents and instruments on behalf of the council.*
- 5. Manifest and record its actions by motion, resolution or other appropriate means.*
- 6. Make a complete record of its proceedings which shall be open to public inspection during regular business hours in the branch office of the department in the active management area.*
- 7. Provide comment to the Arizona water banking authority with regard to draft plans for additional storage facilities and draft plans of operation in accordance with sections 45-2453 and 45-2456.”*



Upcoming: GUAC Recommendations

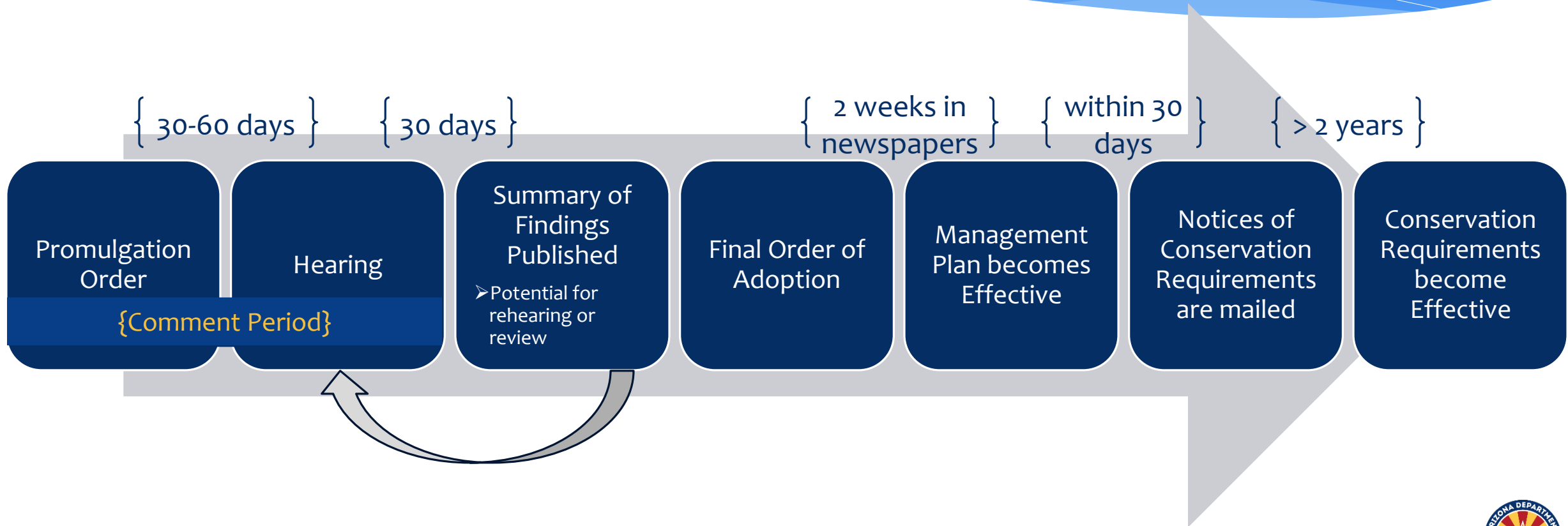
ADWR plans to seek recommendations from the GUAC on the draft Tucson AMA Fifth Management Plan in an upcoming meeting of the Council.

The draft will be published in January and will be sent via email to each member. We can provide a hard copy upon request.

We ask that the Council be prepared to discuss and make recommendations on the plan at the February meeting.

➤ Goal of completing 5MP adoptions for all five AMAs by the end of 2022

Management Plan Promulgation



Questions?

new.azwater.gov/5MP

Concepts page:

<https://new.azwater.gov/5MP/plans-concepts>

Natalie Mast

nlmast@azwater.gov

Full Text of Management Plans:

new.azwater.gov/ama/management-plans

Management Plans Work Group:

For questions about meetings or to submit comments:

managementplans@azwater.gov



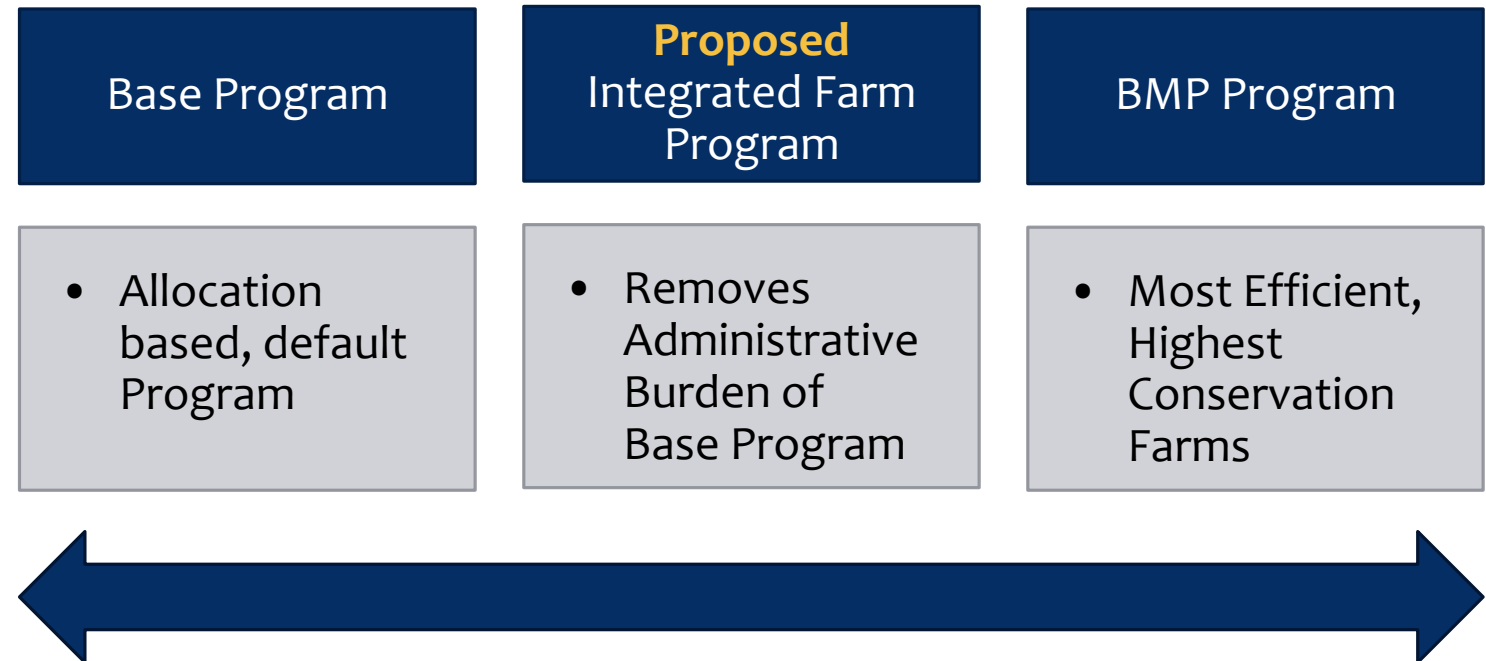
Agricultural Best Management Practices Program

- * Agricultural Best Management Practices Advisory Committee Recommendations:
- * Updates to the List of Approved BMPs
- * Update to Points Targets

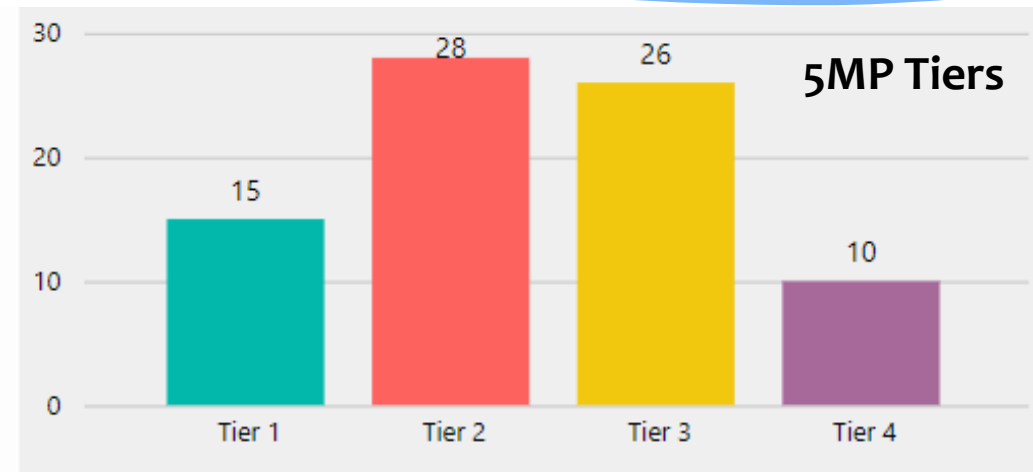
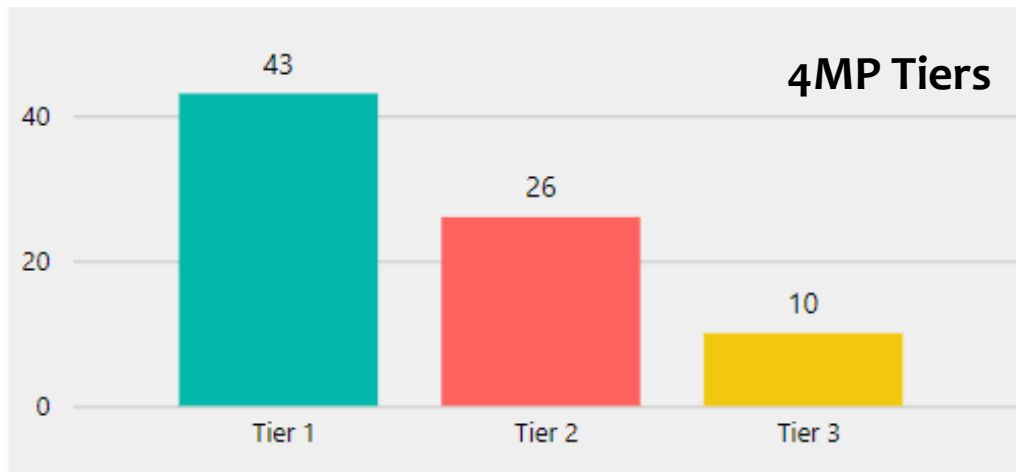
BMP Category	New BMPs	Updated BMPs	Minimum Points Required	Maximum Points Allowed
Section I: 1. Water Conveyance System Improvements	1	1	4 3	4
Section I: 2. Farm Irrigation Systems	3	4	2	4
Section I: 3. Irrigation Water Management Practices	2	6	4 2	4
Section I: 4. Agronomic Management Practices	2	2	4 2	4
Section II: Procedure for New BMP	1	N/A	N/A	
Total	9	13	12	

Agricultural Integrated Farm Program

- * Allotment based program
- * Allows multiple IGFRs under the same owner/operator to combine reporting/allotments
- * Will include a "cut to the aquifer" percentage reduction of the total combined allotment.
- * Draft legal language available:
 - * [Draft 5MP Agricultural Regulatory Language](#)

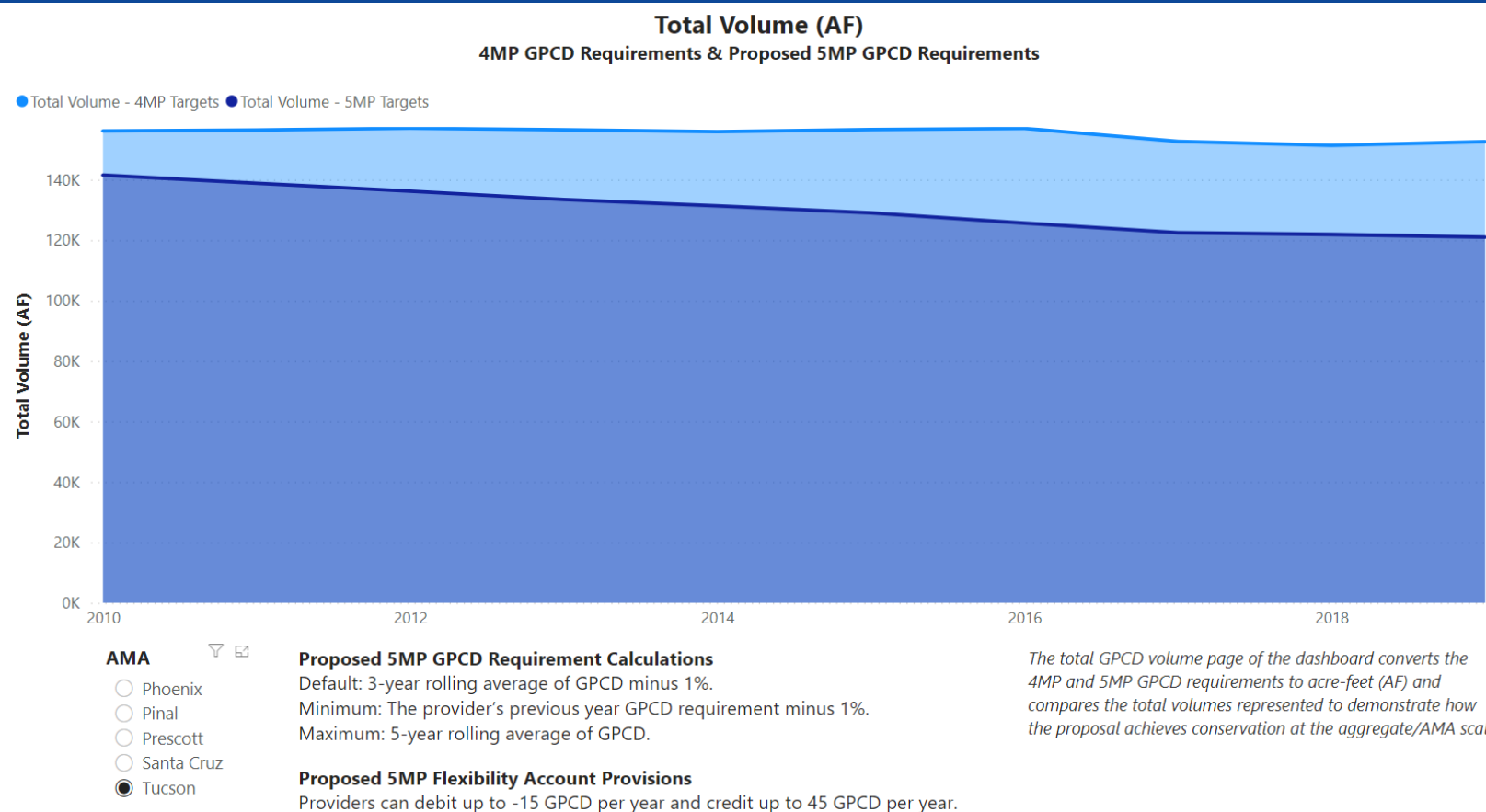


Municipal Non-Per Capita Program



Fourth Management Plans			Fifth Management Plans Proposal			
Service Connections	Tier	Required Number of BMP Points	Service Connections	Tier	Required Number of BMP Points	Number of categories that BMP points must be earned from
0 – 5,000	1	3	0 – 1,000	1	3	2 or more categories
-	-	-	1,001 – 5,000	2	5	3 or more categories
5,001 – 30,000	2	8	5,001 – 30,000	3	10	4 or more categories
30,001 +	3	15	30,001 +	4	20	5 or more categories

Municipal GPCD Program



GPCD Requirement will be the default unless:

Default < Minimum → Minimum

Default > Maximum → Maximum

Minimum	Default	Maximum
<ul style="list-style-type: none"> The provider's previous year GPCD requirement minus 1% 	<ul style="list-style-type: none"> 3-year rolling average of GPCD minus 1% 	<ul style="list-style-type: none"> 5-year rolling average of GPCD

Draft legal language available:

* [Draft 5MP Municipal Regulatory Language](#)

Industrial – Golf Course Conservation Program

Goals

- * Reduce Withdrawals of Groundwater
- * Equitable
- * Incorporate Realistic Practices
- * Transparency/Simplicity

Final Golf Conservation Structure

- * 3 Components:
 - * Allotment Method
 - * Allotment Additions
 - * Effluent Adjustment

Industrial – Non-Golf Turf Conservation Program

Category	Application Rate (AF/Acre)				
	Prescott	Phoenix	Pinal	Tucson	Santa Cruz
Turf	4.17	4.77	4.77	4.6	4.6
Low Water Use Landscaped Area	0.74	0.74	0.74	0.74	0.74
Total Water Surface Area	5.5	6.2	6.2	5.8	5.8

Recharge & Recovery

- * Department held a public meeting detailing and discussing issues and proposals on July 14, 2021.
 - * Potential proposals would simplify the programs and reduce regulatory burden while meeting the goals of the program and maintaining sound water management practices
- * ADWR staff is currently considering the feedback received from stakeholders.

Meeting Agenda

1. Call to Order – Welcome & Introductions – *Chair*
2. Webinar Logistics – *Kennedy Shepard, ADWR*
3. Colorado River Update – *Rachel Von Gnechten, ADWR*
4. Arizona Water Bank Authority Preliminary 2022 Plan of Operation – *Virginia O’Connell, AWBA*

Virginia will present the AWBA 2022 Preliminary Plan of Operation to the GUAC and the public.

5. Groundwater Withdrawal Fee Recommendation & WMAP
 - a. Review withdrawal fee rates and money collected in past five years, WMAP projects, and remaining balance - *Kyle Miller, ADWR*
 - b. Discuss and recommend to ADWR Director groundwater withdrawal fee rates for reporting year 2022 - *Council*
6. GWAICC Update – *Jenna Norris, ADWR*

Jenna will provide the council with an update on GWAICC activities and progress
7. Management Plans Update –*Natalie Mast, ADWR*

Natalie will provide information on the 5th Management Plans development process and the timeline for adopting those plans.
8. Call to the Council – *Council*
9. Call to the Public – *Chair*
10. Adjournment – *Chair*



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